

**FLOOD RISK ASSESSMENT  
FOR COMMERCIAL DEVELOPMENT AT  
COMMON ROAD, MOULTON SEAS END**

**FINAL REPORT**

**ECL1315-2/G R MERCHANT LTD**

**DATE SEPTEMBER 2025**

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### ATTACHMENT 1 – Proposed Elevations & Part Site Plan (Dwg 4325-24-03A)

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## **1.0 INTRODUCTION**

This Flood Risk Assessment has been prepared in accordance with National Planning Policy Framework (NPPF) and supporting planning practice guidance (PPG) on Flood Risk and Coastal Change.

In areas at risk of flooding or for sites of 1 hectare or more, developers are required to undertake a site-specific Flood Risk Assessment to accompany an application for planning permission. This Flood Risk Assessment has been produced on behalf of G R Merchant Ltd in respect of a development that consists of a storage shed extension at Common Road, Moulton Seas End.

A planning application for the proposed development is to be submitted by G R Merchant.

## 2.0 SITE LOCATION AND DESCRIPTION

### 2.1 Site Location

The site is located at Naylors Flowers, Common Road, Moulton Seas End, Spalding, Lincolnshire, PE12 6LF. The National Grid Reference of the site is 5322732852.

The location of the site is shown in Figure 1.

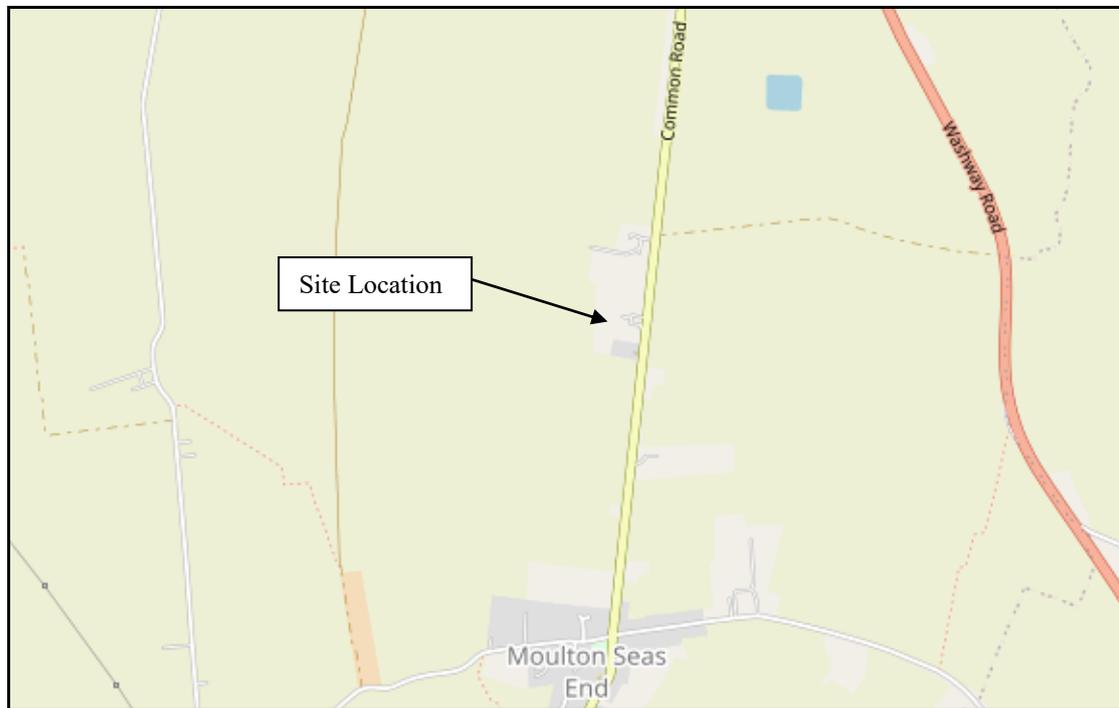


Figure 1 – Location Plan (© OpenStreetMap contributors)

### 2.2 Existing Site

The site is located on the western side of Common Road. The site is a horticultural holding and consists of a series of adjoining agricultural buildings. There is a concrete hardstanding around the buildings. There is a surface water lagoon to the south west of the site. The area of development is approximately 1.3 hectares.

Environment Agency LIDAR shows that the site is flat with ground levels between +3.6m OD and +3.8m OD. The carriageway level of Common Road is +4.0m OD.

The site is in the South Holland Internal Drainage Board (IDB) District. Surface water at the site naturally drains through soakaway and hence to the IDB drain system. There is a riparian drain on the eastern boundary of the site and an IDB High Priority Watercourse located 350m west of the site.

The online British Geological Survey maps indicate that the site is likely to be underlain by Oxford Clay Formation Mudstone. The bedrock is shown to be overlain with superficial deposits of clay and silt.

## 2.3 Proposed Development

The proposed development consists of a storage shed extension. Details of the proposed development are provided in Attachment 1.

## 2.4 Local Development Documents

The South East Lincolnshire Local Plan 2011 – 2036, adopted in March 2019, is the Local Plan for the district. Policy 4: Approach to Flood Risk states the requirements for flood risk reduction.

The South East Lincolnshire Level 1 and Level 2 Strategic Flood Risk Assessment (SFRA) was prepared in June 2017.

The Joint Lincolnshire Flood Risk and Drainage Management Strategy has been prepared by Lincolnshire County Council as the Lead Local Flood Authority. The purpose of the Strategy is to increase the safety of people across Lincolnshire by reducing the number of people at risk of flooding, increasing the resilience of local communities, and reducing the impact of flooding.

## 2.5 Flood Zones

An extract from the Environment Agency Flood Map for Planning is shown in Figure 2. The site is located within Flood Zone 3, an area with a high probability of flooding.

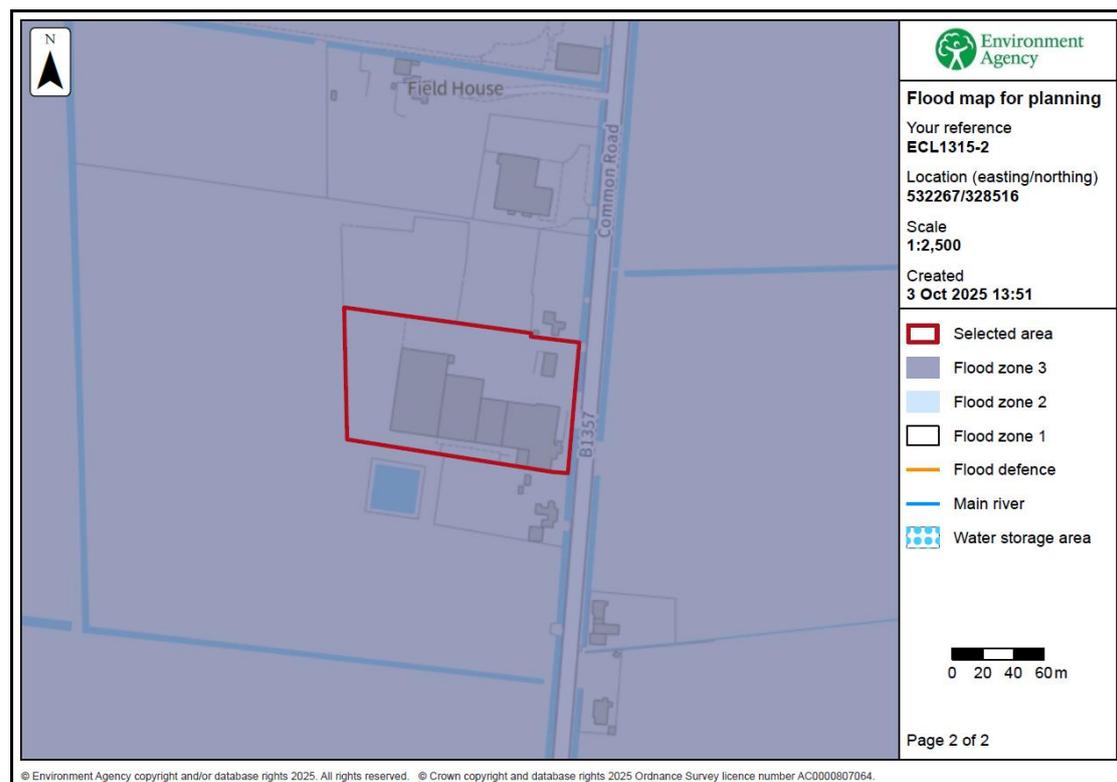


Figure 2 – Environment Agency Flood Map for Planning

The Environment Agency Long Term Flood Risk maps provide an indication of the risk from the primary sources of flooding. The details provided with these maps are summarised in Table 1. The depth of surface water flooding in Table 1 is the maximum depth that occurs during a low chance (between 0.1% and 1% chance each year) event.

	Present Day		2050 Epoch	
	Chance of Flooding	Depth (Low chance)	Chance of Flooding	Depth (Low chance)
Rivers and the Sea	The site has a low chance (between 0.1% and 1% chance each year)	No data available	No data available	No data available
Surface Water	Around the edge of the buildings there are areas with up to a high chance (more than 3.3% chance each year)	Less than 0.2m	Around the edge of the buildings there are areas with up to a high chance (more than 3.3% chance each year)	Less than 0.2m
Reservoir	Outside of the area at risk.			

Table 1 – Environment Agency Long Term Flood Risk Maps

Table 2 shows the level of risk at the site within the South East Lincolnshire SFRA.

SFRA Map	Present Day	2116
Residual Flood Hazard Map for the 1% fluvial and 0.5% tidal event	The site is in the 'Danger for Some' area	The site is in the 'Danger for Some' area
Residual Peak Depth Map for the 1% fluvial and 0.5% tidal event	The site is in an area at risk between 0.25m and 0.5m.	The site is in an area at risk between 0.5m and 1.0m.

Table 2 – Flood Risk within SFRA Maps

### **3.0 FLOOD RISK VULNERABILITY**

#### **3.1 The Sequential and Exception Test**

The NPPF requires the application of a Sequential Test to ensure that new development is in areas with the lowest probability of flooding.

The Exception Test is a method to demonstrate and help ensure that flood risk to people and property will be managed, while allowing necessary development to go ahead in situations where suitable sites at lower risk of flooding are not available.

#### **3.2 Vulnerability Classification**

Table 2 of the PPG Flood Risk and Coastal Change categorises different types of uses and development according to their vulnerability to flood risk. The proposed development is covered by the description of general industry and is classified as 'Less Vulnerable'.

Table 3 of the PPG Flood Risk and Coastal Change sets out Flood Risk Vulnerability and flood zone 'compatibility'. The site is in Flood Zone 3 and the development is 'Less Vulnerable' therefore it is not necessary to complete the Exception Test.

PPG Flood Risk and Coastal Change defines that the lifetime of the development in terms of flood risk and coastal change is 100 years.

#### **3.3 Application of the Sequential Test**

It is for the Local Planning Authority, using the evidence provided and taking advice from the Environment Agency as appropriate, to consider whether an application passes the Sequential Test.

The proposed development will form part of the business based at the site. It would not be practicable to undertake the development at an alternative location. The proposal is considered to pass the Sequential Test.

## 4.0 SITE SPECIFIC FLOOD RISK

### 4.1 Local Flood Assets

The development site within the South Holland Internal Drainage Board is protected by the River Welland tidal defences between Spalding and Fosdyke. The defences are 3.5km north west of the site and minimum embankment levels of +7.0m OD.

There is a long-term strategy for the maintenance of the Environment Agency defences which is reviewed and updated periodically.

There is an extensive local drainage network managed by South Holland IDB. There is an IDB High Priority Watercourse 350m west of the site. The site and the surrounding land are within the Holbeach River Catchment and drain in a northerly direction to discharge to the River Welland at the Holbeach River Sluice.

During the operation and maintenance of its pumping stations, associated structures, and channel systems, the IDB seeks to maintain a general standard capable of providing flood protection to its district. A routine maintenance programme is in place to ensure that the Boards assets are commensurate with the standard of protection that is sought.

Current maintenance standards of the South Holland Internal Drainage Board and the Environment Agency are generally good.

### 4.2 Sources of Flooding

A summary of the sources of flooding is provided in Table 3.

Source of Flooding	Level of Risk
Drainage Network Flooding	The risk is assessed in Section 4.3.
Surface Water Flooding	Based upon the EA maps there are areas around the edge of the buildings with up to a high chance
Fluvial Flooding	The risk is not at risk of fluvial flooding.
Tidal Flooding	The risk is assessed in Section 4.3, 4.5 and 4.6.
Reservoir Flooding	Based upon the EA maps the site is not at risk of flooding from reservoirs.
Groundwater Flooding	There is no evidence to suggest the site is at risk of groundwater flooding.

Table 3 – Sources of Flooding

### 4.3 Probability of Flooding

The probability of flooding associated with blockages in the South Holland IDB drainage system is low due to the maintenance standards achieved and managed by the IDB.

Through the operation and maintenance of the pumping stations and the channel system the Board seek to maintain a general standard capable to providing flood protection to agricultural land and developed areas of 1 in 20 years and 1 in 100 years, respectively. The risk associated with flood events that exceed the standard of protection provided is lowered due to the South Holland IDB main drains incorporating freeboard. This freeboard provides storage during the exceedance events.

The site is within an area benefitting from defences. The River Welland tidal defences provide protection during a 0.5% annual probability (1 in 200 chance each year) event.

### 4.4 Historic Flooding

During the preparation of this assessment, no evidence was discovered of the site being flooded. Previous historic rainfall events of 1968 and 1978, estimated to be greater than 1% annual probability (1 in 100 chance each year), caused no flooding to any residential properties.

### 4.5 Climate Change

Climate change is likely to impact the site through increased rainfall intensity and duration affecting the local drainage network and increased tide levels.

The flood level in the River Welland at Fosdyke during the 0.5% annual probability (1 in 200 chance each year) event inclusive of climate change is estimated to be 6.41m AOD. The minimum defence level of the River Welland embankments is 7.0m AOD.

In summary the site is not at risk for the design life of the development (i.e., 100 years).

### 4.6 Residual Risk

The South East Lincolnshire SFRA includes maps demonstrating the impact of climate change in 2116. The Residual Peak Depth maps within the SFRA indicate the maximum flood depths associated with a breach of the tidal defences. These show that when the climate change allowances are applied to the combination of a 1% annual probability (1 in 100 chance each year) fluvial event and a 0.5% annual probability (1 in 200 chance each year) tidal event the site is at risk with a depth between 0.5m and 1.0m.

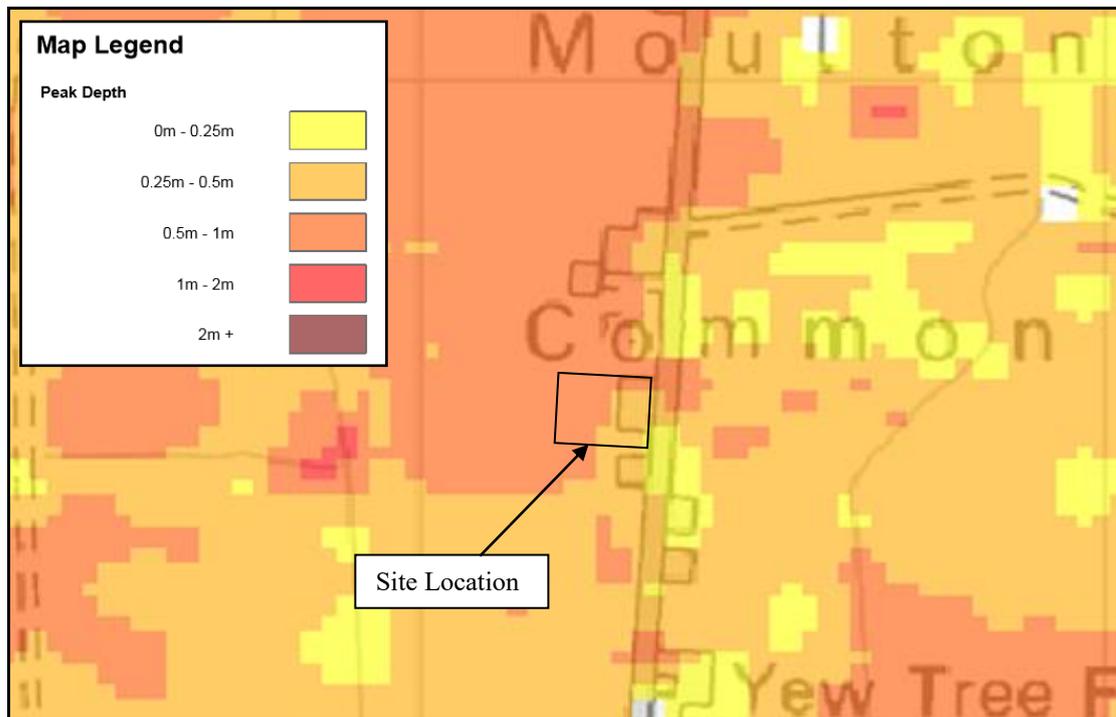


Figure 3 – SFRA 2115 Residual Peak Depth Map during the 1% fluvial and 0.5% tidal Annual Probability Event

## 5.0 FLOOD RISK MITIGATION

### 5.1 Summary of Risks

The probability of this development flooding from localised drainage systems is low. Failure of Holbeach River Sluice could lead to an increased level of risk at the site.

The probability of the site flooding from any Environment Agency system is less than 0.5% annual probability (1 in 200 chance each year) because of the standards of the existing flood defences. Over time there will be a gradual increase in risk to the site due to climate change. During the design life of the development, it is not anticipated that the site would flood from overtopping of the defences.

There is a residual risk to the site if there was a breach in the defences. The site is at risk of flooding with a depth between 0.5m and 1.0m during the 0.5% annual probability (1 in 200 chance each year) tidal event.

The proposed arrangement increases the impermeable area and therefore has the potential to increase rate of surface water runoff from the site.

### 5.2 Mitigation Measures

Based upon the information available during the preparation of this flood risk assessment, to mitigate against the risk of a breach, the following flood resilience measures are recommended:

- there is a water entry strategy allowing flood water to enter the shed extension and drain freely from it;
- the main electrical supply and switchboard are elevated above the flood level;
- the user of the site should register to receive flood warnings from the Environment Agency to reduce the vulnerability of people at the site; and
- the user of the site should identify the actions to be undertaken in the event of receiving a flood warning.

Should there be a failure of Holbeach River Sluice and conditions were such to put properties and land at risk of flooding, the Internal Drainage Board would take emergency action to maintain the drainage level of service by using temporary pumping equipment.

Surface water runoff from the existing development is discharged to the surface water lagoon to the south west of the site. Water within this lagoon is used for irrigation within the site. It is proposed that surface water runoff from the proposed development is discharged to the existing lagoon.

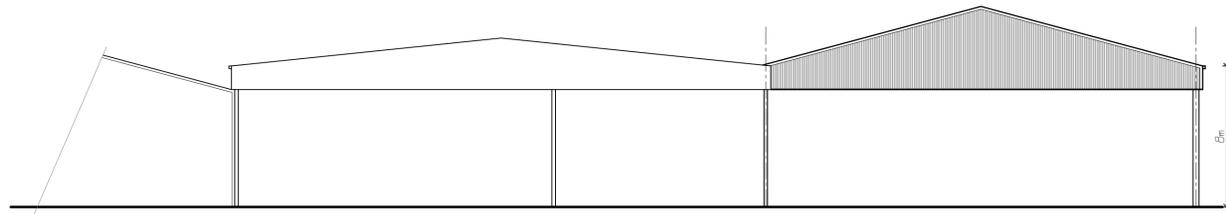
## 6.0 CONCLUSIONS

As a result of the assessment, the following conclusions have been reached.

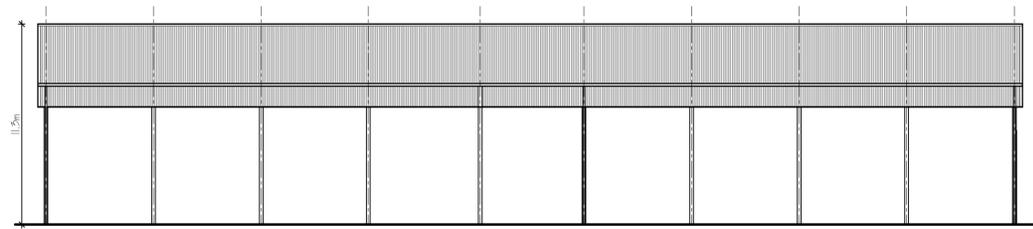
- The proposed development consists of a storage shed extension at Naylors Flowers, Common Road, Moulton Seas End.
- The site is located within an Internal Drainage Board catchment and through the operation and maintenance of the pumping stations and the channel system the Board seek to maintain a general standard capable to providing flood protection to agricultural land and developed areas of 1 in 20 and 1 in 100 years, respectively.
- The proposed development is in Flood Zone 3. The site benefits from defences on the River Welland which provide protection during the 1% annual probability (1 in 100 chance each year) fluvial event and 0.5% annual probability (1 in 200) tidal event including climate change.
- The breach depth within the site is between 0.5m and 1.0m.
- It is recommended that flood resilience measures are adopted to manage the risk of a breach. These include a water entry strategy, elevating services above the flood level, and reducing vulnerability by receiving flood warnings.
- The development passes the Sequential Test and is therefore suitable for the proposed location.

**ATTACHMENT 1**

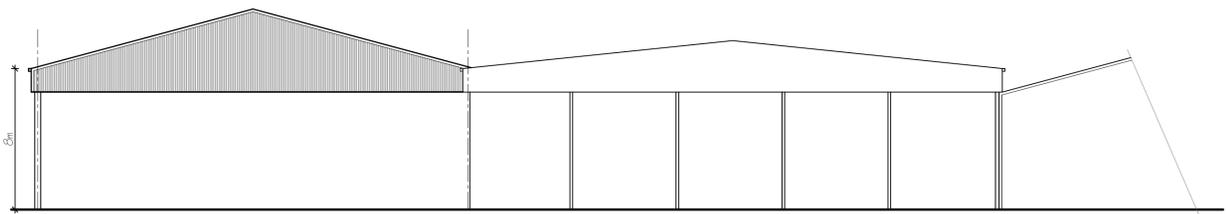
**PROPOSED ELEVATIONS & PART SITE PLAN  
(DWG 4325-24-03A)**



NORTH ELEVATION 1:200



WEST ELEVATION 1:200



SOUTH ELEVATION 1:200



PART SITE PLAN 1:250


A	CLIENT AMENDMENTS	SEPT 2024
ref:	revision	date

**G. R. MERCHANT LTD.**  
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Project  
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 MOLLTON SEAS END  
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Client  
 NAYLOR FLOWERS

Drawing  
 ELEVATIONS - PROPOSED  
 PART SITE PLAN - PROPOSED

Job Ref.	4325-24	Drawing No.	05A
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Date	NOVEMBER 2024	Drawn	SLB
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Scales  
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